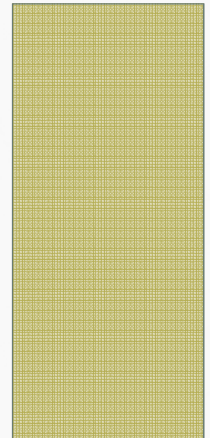


# PLANNING A PROJECT- BASED LESSON

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RED LION AREA SCHOOL DISTRICT



# WHERE DO I BEGIN?

- What content needs to be taught?
- Do I really have to teach it?
  - Direct instruction or other method?
- How can I make it relevant to the students?
  - Interesting to them
  - “cool” factor

# QUESTIONS THAT NEED ADDRESSED

- What standards need met?
- What should the outcome be?
- What should the final product look like / how do we do this?
  - Asking students is OK

## THE NEXT SET OF QUESTIONS

- What will the students need to know by the end of the project?
  - Key points for creating the rubric
- How will I structure the learning so the students gain this knowledge?

# STRUCTURING THE LEARNING

## **RESOURCES**

### **Geothermal**

[How Geothermal Energy Works](#) ↗

[EIA Energy - Kids Geothermal](#) ↗

[Geothermal Education Office](#) ↗

[Types of Geothermal Energy Pumps/Systems](#) ↗

### **Solar**

[How Solar \(Photovoltaic\) Cells Work](#) ↗

[Solar Power Technologies](#) ↗

[How Solar Power Works](#) ↗

[How Does Solar Power Work \(Scientific American Article\)](#) ↗

[How Solar Panels Work - PBS/NOVA](#) ↗

### **Wind**

[Homemade Wind Turbine](#) ↗

[US Department of Energy](#) ↗

[Home Wind Energy Products](#) ↗

[How Wind Turbines Work](#) ↗

### **Insulation**


[Conduction, Convection, and Radiation](#) ↗

[How Insulation Works](#) ↗



# PREPARING THE STUDENTS

- Create and review rubric
  - Identify important parts of project
- Give parameters and calendar

 **rlengineeringprinciples2**

## ☆ Eco House

Edit 0 0 22 ...

This Page is for the first project - the Eco House. All resources are listed below.

[Eco House Project-2.doc](#)

|   |  |                                    |  |  |
|---|--|------------------------------------|--|--|
| Monday, January 23  | Tuesday, January 24                      | Wednesday, January 25              | Thursday, January 26   | Friday, January 27   |
| No School   | Introduce Project<br>Choose Topics       | Introduce Project<br>Choose Topics | Lecture on Energy and<br>Law of Conservation of Energy<br><a href="#">energy_forms_and_changes.ppt</a> | Lecture on How electricity is produced<br>and AC and DC power<br><a href="#">Energy_Generation-1.ppt</a> |
| Monday, January 30  | Tuesday, January 31                      | Wednesday, February 1              | Thursday, February 2   | Friday, February 3   |
| Research / Experimentation  | Research / Experimentation               | Research / Experimentation         | Research / Experimentation   | Research / Experimentation   |
| Monday, February 6  | Tuesday, February 7                      | Wednesday, February 8              | Thursday, February 9   | Friday, February 10  |
| Research / Experimentation  | Research / Experimentation               | Research / Experimentation         | Research / Experimentation   | No School  |
| Monday, February 13   | Tuesday, February 14                     | Wednesday, February 15             | Thursday, February 16  | Friday, February 17  |
| Debrief on<br>Research / Experimentation<br><a href="#">Debriefing Rubric.doc</a> | Debrief on<br>Research / Experimentation | Begin building house               | Build house  | Build house  |
| Monday, February 20   | Tuesday, February 21                     | Wednesday, February 22             | Thursday, February 23  | Friday, February 24  |

# PREPARING THE STUDENTS

- Increase level of concern
  - Competition
  - Peer reviewed work
  - Assessing the intended learning

# THROUGHOUT THE PROJECT

- Keep tabs on learning and progress
- Allow for continual reflection
  - Daily?
  - 3x per week?



# FINALIZING THE PROJECT

- Review and comment on other projects
- Competition
  - Scaled grading?

# FINALIZING THE PROJECT

- Reflection

**REFLECTION**

**Eco-House Reflection**

Complete this form as the reflection piece to the Eco-House project. The reflection is worth 20 points.

\* Required

**Name \***

**Summarization \***

Summarize the project. Use proper grammar and complete sentences.

**The Good.... \***

Looking at the house prototype, what aspects went well? Again, use proper grammar and complete sentences.